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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,991	05/26/2006	Shigeki Satou	890050.542USPC	7056

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EXAMINER	
NGUYEN, KHANH TUAN	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
09/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,991	SATOU ET AL.	
	Examiner	Art Unit	
	KHANH T. NGUYEN	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/22/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Final

Response to Amendment

1. The amendment filed on 07/18/2008 is entered and acknowledged by the Examiner. Claims 1-10 and newly added claims 11-12 are currently pending in the instant application.

2. The Examiner noted that Applicant had failed to responses to the provisionally rejected of claims 1-3 and 4-10 on the ground of nonstatutory obviousness- type double patenting over claims 1-4 of copending Application No. 10/580,749. Therefore, the rejection is maintained for the reasons set forth below.

Withdrawn Rejection(s)

3. The rejection provisionally rejected of claims 1-3 and 4-10 on the ground of nonstatutory obviousness- type double patenting over claims 1-4 of copending Application No. 10/582,994 is withdrawn in view of Applicant's amendment. The rejection of claims 1 and 3 under 35 U.S.C. 102(b) as being anticipated by Yokoyama et al. (U.S. Pat. 5,242,511) is withdrawn in view of Applicant's remark. The rejection of claims 2 and 4 under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al.

(U.S. Pat. 5,242,511) in view of December (U.S. Pub. 2002/0056641 A1) is withdrawn in view of Applicant's remark.

Information Disclosure Statement

4. The information disclosure statement (IDS) filed on 07/22/2008 has been considered. An initialed copy accompanies this Office Action.

Double Patenting (Previous Rejection)

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 4-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 5-18 of copending Application No. 10/580,749. Although the conflicting claims are not identical, they are not patentably distinct from each other because both Applications contain the method of manufacturing a conductive paste comprising of acrylic resin, butyral resin and a solvent selected from a group consisting of limonene, alpha- terpinyl acetate, l-dihydrocarvyl acetate, l-menthone, l-perillyl acetate, l-carvyl acetate, and d-dihydrocarvyl acetate that is printed onto a ceramic green sheet to form the electrode layer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 4-6, and 11-12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over English Translation of JP Pub. 07-021833 (hereinafter Sasaki).

Sasaki teaches a conductive paste capable of printing onto a ceramic green sheet to produce a multilayered ceramic electronic parts (Abstract). The conductive paste comprising of an organic binder including **butyral resin** and **acrylic resin** [0014];

a solvent such as butyl carbitol acetate, a terpineol, kerosene or **hydrogenated terpineol acetate solvent** [0012-0013]; and conductive metal powder such as Pd, Ag, Au, Pt, **nickel** or alloy thereof [0010].

The reference specifically or inherently meets each of the claimed limitations. The reference is anticipatory.

In the alternative that the above disclosure is insufficient to anticipate the above listed claims, it would have nonetheless been obvious to the skilled artisan to manufacture the claimed multilayered ceramic electronic component, any minor modification necessary to meet the claimed limitations, such as *patterning the electrode layer prior or after forming the electrode layer* would have been within the purview of the skilled artisan.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 4-6, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 5,601,638 (hereinafter Fukuda) in view of U.S. Pat. 5,766,392 (hereinafter Nakano).

With respect to instant claim 1, Fukuda teaches a conductive paste comprises of a matrix comprising of ethyl cellulose, **polyvinyl butyral**, or **acrylic resin** dissolve in

butyl carbitol acetate, alpha-terpineol or 2-tetradeecanol (Col. 2, lines 44-56). At column 2 lines 8-14, Fukuda teaches said paste can be conductive by adding conductive powder such as **nickel**, Au, Ag, Ag-Pd or Cu into the said matrix (Col. 3, lines 2-10), as recited in claim 11. The Fukuda also teaches the conductive paste and insulating paste are alternately printed by screen printing on to a ceramic substrate to form a green-sheet multilayered laminate(Col. 3, lines 29-51).

The difference between the instant applicant and Fukuda disclosure is that Fukuda failed to suggest a solvent selected from a group consisting of limonene, alpha-terpinyl acetate, l-dihydrocarvyl acetate, l-menthone, l-perillyl acetate, l-carvyl acetate and d-dihydrocarvyle acetate.

In an analogous art, Nakano teaches a conductive paste comprising of acrylate polymer (Col. 2, lines 49-52) and geraniol, alpha-terpineol or **terpineol acetate solvent** (Col. 2, lines 44 and 59). The terpineol acetate solvent of Nakano is readable on the claims alpha-terpineol acetate since a skilled artisan can easy select and use alpha-terpinyl acetate after having read Nakano disclosure because such as an acetate ester solvent is disclosed by the prior art. Nakano further teaches adding metal powder such as Pd, Ag and Pd-Ag powder into the acrylate mixture to form a conductive paste (Col. 2, lines 55-56).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the conductive paste of Fukuda by substituting the alpha-terpineol solvent of Fukuda with the terpineol acetate solvent of Nakano

because such substitution is expressly suggested by the prior art. The burden is upon the applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

7. Claims 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either English Translation of JP Pub. 07-021833 (Sasaki) or U.S. Pat. 5,601,638 (Fukuda) in view of U.S. Pat. 5,766,392 (Nakano) as applied to the above claims, and further in view of U.S. Pat. 5,242,511 (hereinafter Yokoyama).

Sasaki, Fukuda and Nakano are relied upon as set forth above. Sasaki, Fukuda and Nakano did not disclose the acrylic resin having an acid value of equal to or larger than 5 mgKOH/g and equal to or smaller than 25 mgKOH/g.

In an analogous art, Yokoyama teaches conductive paste composition comprising copper alloy including Au, Pd, Ag and Cu (Col. 4, lines 27-38), alpha-terpineol solvent (Col. 7, line 56), and acrylic resin having an acid value of 10 to 80 mg/g, preferably 20 to 75 mg/g, for improving water resistance (Col. 5, lines 30-36). Yokoyama teaches an acrylic resin having an acid value range (10-80 mg/g) that overlaps with the claimed range of 5-25 mg/g.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the paste conductive of either Sasaki or Fukuda in view of Nakano by incorporating an acrylic resin as suggested by either Sasaki or Fukuda in view of Nakano which have an acid value as low as 10 mg/g to provide water resistance as suggested by Yokoyama and used to manufacture multilayered ceramic electronic component.

8. Claims 2-3 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either English Translation of JP Pub. 07-021833 (Sasaki) or U.S. Pat. 5,601,638 (Fukuda) in view of U.S. Pat. 5,766,392 (Nakano) as applied to the above claims, and further in view of U.S. Pub. 2002/0056641 A1 (hereinafter December).

Sasaki, Fukuda and Nakano are relied upon as set forth above. Sasaki, Fukuda and Nakano did not disclose the acrylic resin having an average molecular weight of equal to or larger 450,000 and equal to or smaller than 900,00 as recite in claim 2 and an acid value of equal to or larger than 5 mgKOH/g and equal to or smaller than 25 mgKOH/g as recited in claim 3.

However, December teaches an acrylic polymer useful in multilayer coating composition having an average molecular weight from about 5,000 to about 5,000,000 [0151] with an acid number from about 1 to about 10 [0142]. December teaches an acrylic resin having and average molecular weight and an acid value range that overlaps with the claimed ranges recited in claims 2 and 3. December also teaches said acrylic polymer may be mixed with ketone, ester, acetate or aromatic hydrocarbon solvent to form the said coating composition [0157].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to formulate conductive paste comprising of an acrylic resin and alpha-terpinyl acetate by modifying paste of either Sasaki or Fukuda in view of Nakano by incorporating an acrylic polymer having an average molecular weight in the range of about 5,000 to about 5,000,000 with and acid value of about 1 to about 10 as

suggested by December because such a substitution of one similar polymer for another having a similar chemical structure (acrylate polymer) would having yield a predictable result. The court has held similar compounds are generally expected to have similar properties. In re Gvurik, 596 F. 2d 1012,201 USPQ 552. Closely related homologues, analogs and isomers in chemistry may create a prima facie case of obviousness. In re Dillon USPQ 2d 1 897,1904 (Fed. Cir. 1990); In re Payne 203 USPQ 245 (CCPA 1979); In re Mills 126 USPQ 5 13 (CCPA 1960); In re Henze 85 USPQ 261 (CCPA 1950); In re Hass 60 USPQ 544 (CCPA 1944). Thus, one having an ordinary skill in the art would have had a reasonably expectation of success for incorporating a high molecular weight acrylic resin of December into the conductive paste of either Sasaki or Fukuda in view of Nakano. The Examiner further notes that substitution of equivalents, i.e. acrylic resin having overlapping acid values, requires no express motivation as long as the prior art recognizes the equivalency. Please see. In re Fount USPQ 532 (CCPA 1982); In re Siebentritt, 152 USPQ 618 (CCPA 1967); Graver Tank & Mfg. Co. Inc. v Linde Air Products Co., 85 USPQ 328 (USSC).

9. Claims 4-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either English Translation of JP Pub. 07-021833 (Sasaki) or U.S. Pat. 5,601,638 (Fukuda) in view of U.S. Pat. 5,766,392 (Nakano) as applied to the above claims, and further in view of U.S. Pat. 5,242,511 (hereinafter Yokoyama) as applied to the above claims, and further in view of English Translation of JP Pub. 09-124771 (hereinafter Kobayashi).

Sasaki, Fukuda and Nakano are relied upon as set forth above. Sasaki, Fukuda and Nakano did not explicitly disclose the degree of polymerization of the butyral system resin.

However, Kobayashi discloses a butyral system resin consisting of polyvinyl butyral having a degree of polymerization of 1,500 to 2,500, a degree of butyralization of at least 65 mol%, and conductive particle such as Au, nickel, Ag, Cu and Pd coated particle useful in coating electronic components (Abstract; [0001] and [0012]).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the method of manufacturing multilayered ceramic component of either Sasaki or Fukuda in view of Nakano by incorporating a butyral resin having the a degree of polymerization as suggested by Kobayashi to improve storage stability and stability of connection resistance.

10. In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Response to Arguments

11. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571)272-8082. The examiner can normally be reached on Monday-Friday 8:00-5:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KTN
09/11/2008

/DOUGLAS MC GINTY/
Primary Examiner, Art Unit 1796